Gulf of Mexico Harmful Algal Bloom Bulletin

Region: Texas

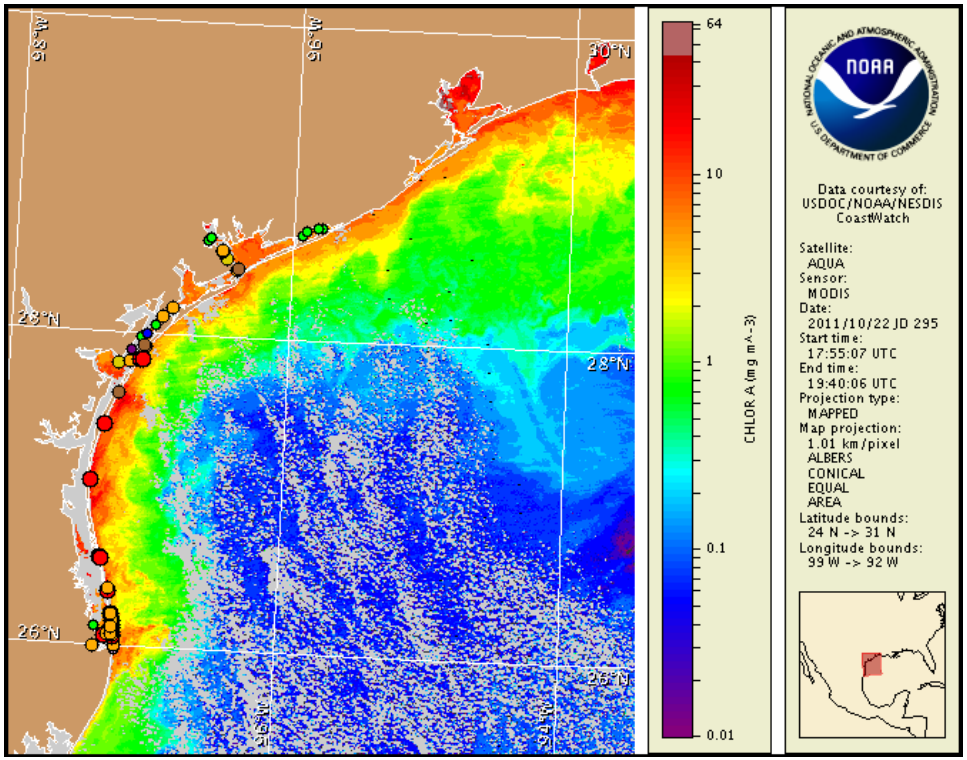
Monday, 24 October 2011

NOAA Ocean Service

NOAA Satellite and Information Service

NOAA National Weather Service

Last bulletin: Thursday, October 20, 2011



Satellite chlorophyll image with possible HAB areas shown by red polygon(s). Cell concentration sampling data from October 14 to 24 shown as red (high), orange (medium), yellow (low b), brown (low a), blue(very low b), purple (very low a), pink (present), and green (not present). For a list of cell count data providers and a key to the cell concentration categories, please see the HAB-OFS bulletin guide:

http://tidesandcurrents.noaa.gov/hab/habfs_bulletin_guide.pdf

To see previous bulletins and forecasts for other Harmful Algal Bloom Bulletin regions, visit the NOAA Harmful Algal Bloom Operational Forecast System bulletin archive: http://tidesandcurrents.noaa.gov/hab/bulletins.html

Conditions Report

A harmful algal bloom is present along the Texas coast in the Galveston/Freeport area, alongshore the Matagorda Peninsula and within Matagorda Bay, in the Aransas Pass area and within Corpus Christi Bay, alongshore Padre Island National Seashore and the South Padre Island region, within the lower Laguna Madre, and within the Brownsville Ship Channel area. Today through Wednesday, patchy high impacts are possible in the Port Aransas/Corpus Christi regions, alongshore Padre Island National Seashore and South Padre Island, and within the lower Laguna Madre, with patchy moderate impacts possible in the Matagorda Peninsula region and within the Brownsville Ship Channel. No additional impacts are expected at the coast in Texas today through Wednesday, October 26. Over the past few days, reports of dead fish, respiratory irritation, and discolored water have been received from the Port Aransas/Corpus Christi Bay region. Dead fish and respiratory irritation have been reported in the Matagorda Bay and South Padre Island regions, and respiratory irritation and discolored water have been reported along the Padre Island National Seashore.

Analysis

A harmful algal bloom is present along the Texas coast in the Galveston/Freeport area, alongshore the Matagorda Peninsula and within Matagorda Bay, in the Aransas Pass area and within Corpus Christi Bay, alongshore Padre Island National Seashore and the South Padre Island region, within the lower Laguna Madre, and within the Brownsville Ship Channel area.

No new samples have been received from the Galveston or Matagorda Bay regions. In the Galveston area, the last reported samples on 10/13 indicated concentrations ranging from 'very low a' to 'low a' (TPWD). It is possible that bloom concentrations have diminished in this region; however, sampling is necessary to confirm. In the Matagorda Bay region, the most recent sample results indicate *Karenia brevis* concentrations ranging from 'low a' to 'medium' along the western side of the bay (10/17; TPWD). Samples from East Matagorda Bay and Lavaca Bay indicate that *K. brevis* is not present (10/17-18; TPWD). Dead fish and respiratory irritation have been reported within the Espiritu Santo and San Antonio Bay region at the ICWW on the western end of San Antonio Bay and at the Shoalwater Flats Association boat ramp on Friday (10/21; TPWD)

In the Port Aransas region, samples collected from the Aransas Bay area indicate *K. brevis* concentrations continue to range from 'low a' to 'medium' (10/20; TPWD). Two 'medium' concentrations were collected at the north end of Aransas Bay (within the Intracoastal Waterway (ICWW) at the Mesquite Bay Channel and at ICWW #7) and concentrations increased from 'not present' to 'low a' at the Lydia Ann Channel Lighthouse and at the south end of Aransas Bay near Mud Island and from 'not present' to 'very low b' within Aransas Bay at ICWW #49. Two samples collected within Aransas Bay at Long Reef/St. Jose Island and ICWW #26 indicate that *K. brevis* is 'not present'(10/20; TPWD). Samples collected over the past several days near the mouth of Aransas Pass at the UTMSI pier, marina, and the U.T. pier at the Port Aransas jetties indicate *K. brevis* concentrations ranging from 'low a' to 'medium' (10/20-24; TPWD). Respiratory irritation was reported in Port Aransas and along San Jose and Mustang Island over the past several days. Dead fish and discolored water have also been reported along Mustang Island, with the heaviest concentration of dead fish near Fish Pass Jetty. Dead fish and

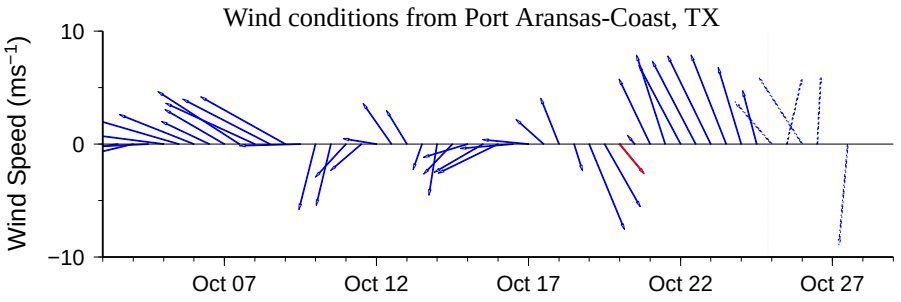
discolored water have been reported in Corpus Christi Bay near the Kiewit fabrication plant in Ingleside (10/24; TPWD). As of Thursday (10/20), discolored water was visible within the Corpus Christi Bay area at the Naval Air Station east to the Fish Pass on Mustang Island and north to near Shamrock Island (TPWD).

Two new samples collected at the south end of the Padre Island National Seashore indicate 'high' *K. brevis* concentrations inside the Port Mansfield jetty and 'low a' concentrations outside the jetty along the Gulf (10/19; TPWD). Respiratory irritation and discolored water have been reported alongshore Padre Island National Seashore to marker 252; bird kills in the area are likely not the result of red tide (10/24; TPWD).

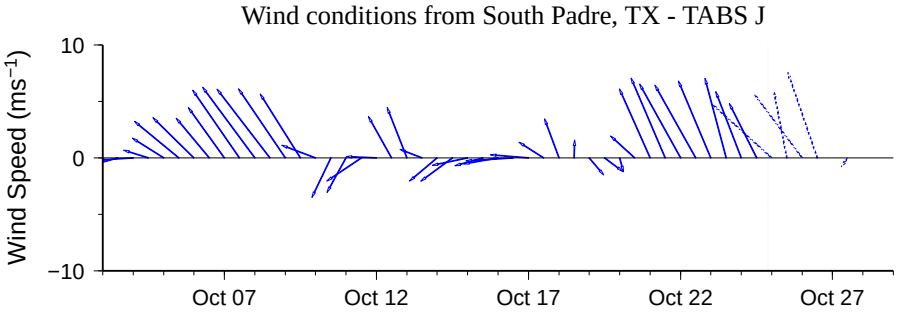
Ten new samples collected alongshore the gulf side of South Padre Island from 14 miles south of East Cut (northernmost) to the UTPA Coastal Studies Lab (southernmost) indicate *K. brevis* concentrations at the coast continue to range from 'low b' to 'high' (10/19-22; TPWD). Further south along the coast, one sample collected at Boca Chica Beach (at Highway 4) indicates that *K. brevis* concentrations have increased from 'very low a' to 'medium' (10/21; TPWD). Samples collected within Brazos Santiago Pass and at the Isla Blanca boat ramp indicate 'medium' concentrations (10/21-22; TPWD). Within the lower Laguna Madre, samples collected at Port Isabel, the Sea Ranch Marina, and the west and east ends of the Queen Isabella Causeway indicate that *K. brevis* continues to range between 'medium' and 'high' concentrations, while one sample collected farther north within the lower Laguna Madre, at Holly Beach, indicates that *K. brevis* is not present (10/21-22; TPWD). Samples collected within the Brownsville Ship Channel at the San Martin boat ramp indicated 'not present' and 'medium' *K. brevis* concentrations on 10/19 and 10/21, respectively (TPWD). Dead fish have been reported from South Padre Island, within the Brownsville Ship Channel from Brazos Santiago Pass to San Martin Lake, in the Port Isabel Harbor area, and in the Bahia Grande. Respiratory irritation has been reported alongshore South Padre Island and Boca Chica Beach and within the Brownsville Ship Channel at the San Martin boat ramp (10/20-24; TPWD).

In recent MODIS imagery (10/22, shown left), elevated chlorophyll (3 -10 μg/L) is visible along- and offshore the majority of the Texas coastline. Several patches of high to very high chlorophyll (10 to >20 μg/L) are present along- and offshore the coast: in the Galveston area along- and offshore the Bolivar Peninsula, along- and offshore the area surrounding Pass Cavallo (analysis in this area limited due to cloud cover), and in much of the area along- and offshore the Padre Island National Shore region stretching from Corpus Christi Bay to Port Mansfield and along northern South Padre Island (27°41'51''N 97°8'18''W to 26°43'18''N 97°19'10''W). Elevated chlorophyll at the coast may contain *K. brevis* but could also be due to the continued resuspension of benthic chlorophyll and sediments, making it difficult to determine the extent of blooms from satellite imagery alone.

Forecast models indicate a maximum bloom transport from coastal sample locations of 30-40km north from the Matagorda Peninsula region, 60km north from Aransas Pass, 120km north along the Padre Island National Seashore, and 160km north from Brazos Santiago Pass from October 21-27. South winds over the next several days will increase the potential for impacts along the Texas coastline. Derner, Kavanaugh



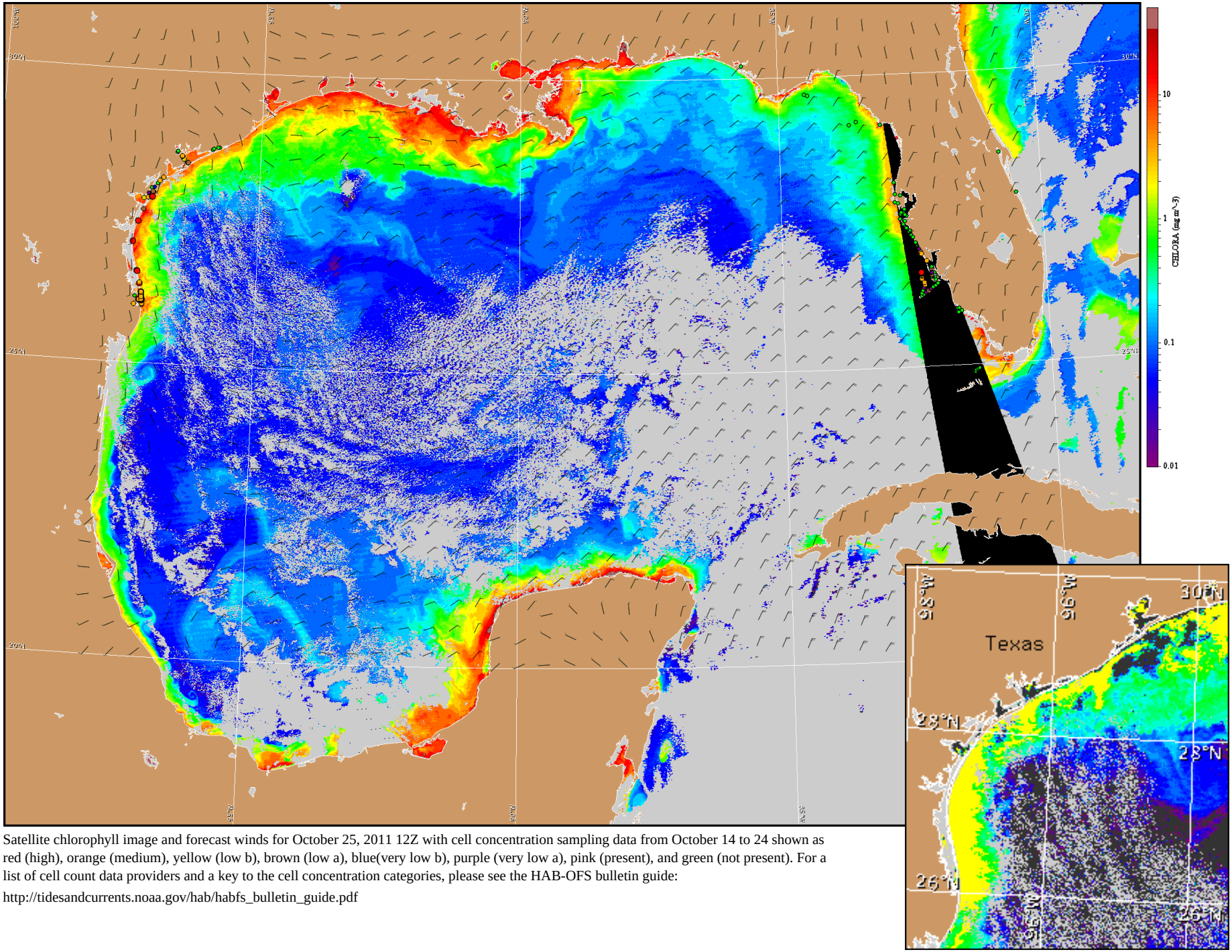
Wind speed and direction are averaged over 12 hours from buoy measurements. Length of line indicates speed; angle indicates direction. Red indicates that the wind direction favors upwelling near the coast. Values to the left of the dotted vertical line are measured values; values to the right are forecasts. Wind observation and forecast data provided by NOAA's National Weather Service (NWS).



Wind Analysis

Port Aransas: South winds (5-15kn, 3-8m/s) today through Wednesday, increasing (15-20kn, 8-10m/s) later on Wednesday.

South Padre: Southeast winds (15kn, 8m/s) today. South winds (15kn) Tuesday, becoming southeast (15kn) Tuesday night. South winds (15kn) Wednesday.



Satellite chlorophyll image and forecast winds for October 25, 2011 12Z with cell concentration sampling data from October 14 to 24 shown as red (high), orange (medium), yellow (low b), brown (low a), blue(very low b), purple (very low a), pink (present), and green (not present). For a list of cell count data providers and a key to the cell concentration categories, please see the HAB-OFS bulletin guide:

http://tidesandcurrents.noaa.gov/hab/habfs_bulletin_guide.pdf

Verified and suspected HAB areas shown in red. Other areas of high chlorophyll concentration shown in yellow (see p. 1 analysis for interpretation).